Journal of Materials Processing Technology, 32 (1992) 651-654
Elsevier

Contents Volume 32

Vol. 32, Nos. 1&2, July 1992

Special Issue: Proceedings of the Second International Conference on Material Processing Defects, Siegburg, Germany, July 1-3, 1992

Preface vii
Contents xi

James Nasmyth (1808-1890): The steam hammer and the mechanics of Vee-anvil forging (*Conference Keynote*)
W. Johnson 1

1. Micro- and macro-scale observation of defects
Towards crack minimisation of EDMed surfaces
L.C. Lee, L.C. Lim and Y.S. Wong (Singapore) 45
Hot wear resistance of TiN coated mould and tool materials
K.A. Pischow, S.O. Kivivuori and A.S. Korhonen (Espoo, Finland) 55
Explosive 'form-cladding' - A critical study
K. Raghu Kandan, M. Rathinasabapathi and P.V. Vaidyanathan (Annamalainagar, India) 65

2. Localisation and instability analysis
Modeling dynamic strain localization in inelastic solids (*Keynote*)
M. Predeleanu (Cachan, France) 75
Influence of superimposed hydrostatic tension on void growth in the neck of a metal sheet in biaxial stress fields
Part I - Modelling
S.B. Padwal, R.C. Chaturvedi (Bombay, India) and U.S. Rao (Puttaparthi, India) 91
Influence of superimposed hydrostatic tension on void growth in the neck of a metal sheet in biaxial stress fields
Part II - Plastic instability
S.B. Padwal, R.C. Chaturvedi (Bombay, India) and U.S. Rao (Puttaparthi, India) 99
Non-equilibrium transitions in ensembles of defects as mechanisms of plasticity and fracture of solids
O.B. Naimark (Perm, Russia) 109

3. Damage modelling and fracture criteria
Void growth in drawing and extension of ductile metals (*Keynote*)
P. Dawson, Y.S. Lee and A. Kumar (Ithaca, NY, USA) 119
Spall damage modelling and dynamic fracture specificities of ceramics
V.V. Belyaev (Perm, Russia) 135
Prediction of defects in metal forming: Application to wire drawing
L. Chevalier (Cachan, France) 145

Elsevier Science Publishers B.V.

Stress field near sharp notches
G. Demelio and C. Pappalettere (Bari, Italy) 155
Deep-drawing cracks - stretching cracks: Two different types of cracks in deep-drawing processes
E. Doege and T. El-Dsoki (Hannover, Germany) 161
Dynamic loading, viscoplasticity and temperature effects on the evolution of damage in metal forming processes
J.C. Gelin (Besancon, France) 169
Finite element simulation of void nucleation growth and coalescence in isotropic standard elasto-plasticity: Application to cold forging
P. Picart, J. Oudin and B. Bennani (Valenciennes, France) 179
Field intensity method for fracture prediction
X.L. Yu (Beijing, China) 189
A fully coupled elastoplastic damage modeling and fracture criteria in metalforming processes
Y.Y. Zhu, S. Cescotto and A-M. Habraken (Liège, Belgium) 197

4. Formability characterisation
Formability determination for production control (*Keynote*)
J.A. Schey (Waterloo, Canada) 207
Formability characterisation of aluminium cladded deep drawing sheets for automotive catalytic converters and simular parts
D. Bauer and M. Wendt-Ginsberg (Siegen, Germany) 223
Formability characterization of austenitic stainless steel
M.J.M. Barata Marques and R.M.S.O. Baptista (Lisboa, Portugal) 233
The effects of strain, strain rate and temperature on formability of Ti-6Al-4V alloy
A. El-Domiaty (Port Said, Egypt) 243
The torsion–tensile testing method for the characterization of cold metal formability
J.F. Fontaine (Dijon, France) 253
Prediction of forming limit diagrams with experimentally determined heterogeneity of anisotropic sheets
J.Z. Gronostajski and Z. Zimniak (Wrocław, Poland) 263
Formability of metal alloys in the part-liquid state
W. Łapkowski and J. Sińczak (Kraków, Poland) 271
A new tensile test on notched specimens to assess the forming limit diagram of sheet metals
D. Priadi, C. Magny, E. Massoni, C. Levaillant (Valbonne, France) and L. Penazzi (Rungis, France) 279

5. Specific methods for defect prediction
Influence of material laws on defect development predictions (*Keynote*)
D. Besdo (Hannover, Germany) 291
The trousers tearing test with ductile metal sheets
C. Muscat-Fenech, J.H. Liu and A.G. Atkins (Reading, UK) 301
Prediction of strain rate sensitivity variations in the deformation of superplastic materials
J.D. Bressan (Joinville, Brazil) and B. Baudelet (Saint Martin d'Hères, France) 317
A new tensile test on in situ solidified notched specimens: Hot ductility analysis of continuous casting steels
P. Deprez, J.P. Bricout and J. Oudin (Valenciennes, France) 325

Models and experimental results in plastic deformation processes: The reverse extrusion
C. Giardini, E. Ceretti, G. Maccarini, G. Pellegrini and A. Bugini (Brescia, Italy) 335
Residual stresses in cyclic powder compaction
D. Picart (Le Ripault, France) and P. Gilormini, (Cachan, France) 345
Evolution of structural anisotropy in metal forming processes
J. Tirosh (Haifa, Israel) 355
Real-time defects detection in flow-forming process
Z.H. Song, W.M. Le, S.C. Chen, W.B. Gu and X.M. Qian (Shanghai, China) 365
Quantative calculation of deformation tendencies on drawing plate with hole
Z.H. Wang and Z. Tong (Hohhot, China) 371

6. Designing to avoid potential defects
Physical modelling and numerical prediction of defects in sheet metal forming (*Keynote*)
C. Levaillant and J.L. Chenot (Valbonne, France) 383
Designing to avoid potential defects: Simulation of the temperature effect on closing pressure during stamping
S. Tichkiewitch and J.F. Boujut (Grenoble, France) 399
Plasma coating of surfaces and how to assess and avoid defects
M.S.J. Hashmi (Dublin, Ireland) 407
Structural characteristics of hot cracks in liquid-forged steel flat flanges
L.X. Hu, S.J. Luo, W.C. Huo (Harbin, China) and H.J. Li (Xian, China) 421
Numerical prediction of flow induced orientation in anisotropic suspensions. Application to injection molding of fibers reinforced thermoplastics
A. Poitou (Cachan, France), F. Chinesta and R. Torres (Valencia, Spain) 429
Design for quality explosive welding
P.V. Vaidyanathan and A.R. Ramanathan (Annamalainagar, India) 439

7. Practical solutions
Increase of workability of brittle materials by cold extrusion (*Keynote*)
H.W. Wagener, J. Haats and J. Wolf (Kassel, Germany) 451
Some physical defects in metal forming processes and creation of a data base
M.M. Al-Mousawi, A.M. Daragheh (Stafford, UK), S.K. Ghosh (Siegburg, Germany) and D.K. Harrison (Stafford, UK) 461
Defects caused in forming process of rotary forged parts and their preventive methods
D.C. Zhou, S.J. Yuan, Z.R. Wang (Harbin, China) and Z.R. Xiao (Benxi, China) 471
A comparison of magnetron sputtered and arc evaporated PVD thin films for wear applications in multipoint cutting tools
M.G. Fleming and M.S.J. Hashmi (Dublin, Ireland) 481
Eliminating defects of Zn–Al alloy by squeeze casting or liquid extrusion
H.J. Li (Xian, China), S.J. Luo (Harbin, China), L.H. Qi (Luoyang, China) and X.P. Ren (Beijing, China) 489
Tooling design accommodating springback errors
A.P. Karafillis and M.C. Boyce (Cambridge, MA, USA) 499
The effect of deformation zone geometry on internal defects arising in plane strain rolling
S. Turczyn and M. Pietrzyk (Kraków, Poland) 509

Late Papers
Finite element simulation of the ductile fracture in 3-D sheet metal forming process
N. Boudeau and J.C. Gelin (Besancon, France) 521

Vol. 32, No. 3, August 1992

Cylindrical mandrel drawing of tubes: A matrix method simulation compared with experiment
S. Urbanski, M. Packo (Kraków, Poland), U. Ståhlberg and H. Keife (Stockholm, Sweden) 531
A note on the effect of nodularization characteristics on the workability of quench-hardened and tempered cast irons
M.A. Shaker (Port-Said, Egypt) 545
Machinability of carbon fiber-epoxy composite materials in turning
K.S. Kim, D.G. Lee, Y.K. Kwak and S. Namgung (Taejon, South Korea) 553
Abrasive water-jet cutting of amorphous alloys
T. Sano, M. Takahashi, Y. Murakoshi, S. Suto and K. Matsuno (Tsukuba, Japan) 571
Design aspects and parametric study of 3-roll heavy-duty plate-bending machines
V. Ramamurti, V.R.S. Rao (Madras, India) and N.S. Sriram (Pennsylvania, NE, USA) 585
The prediction of macro-defects during the isothermal forging process by the rigid–viscoplastic finite-element method
M.W. Fu (Nanchang, China) and Z.J. Luo (Xian, China) 599
Evaluating the performance of "seeded gel" grinding wheels
J. Eranki, G. Xiao and S. Malkin (Amherst, MA, USA) 609

Short Communication
Microvoid growth in metals during plastic deformation
S.C. Wu, H. Liang and M.Q. Li (Xian, China) 627

Letters to the Editor 633
Book Reviews 639
Dairy Supplement 643
Acknowledgement of Referees 647
Author Index Volume 32 649
Contents Volume 32 651

U·M·I

VOLUME 32 ISSUE 1-2, PAGE 26 AND PAGES 108-111 CONTAINS SOME BROKEN OR FADED PRINT AND MAY BE DIFFICULT TO READ. THIS REPRODUCTION IS MADE FROM THE BEST COPY AVAILABLE.